

MTL4573 – MTL5573

TEMPERATURE CONVERTER

THC or RTD input

The MTLx573 converts a low-level dc signal from a temperature sensor mounted in a hazardous area into a 4/20mA current for driving a safe-area load. Software selectable features include linearisation, ranging, monitoring, testing and tagging for all thermocouple types and 2-, 3- or 4-wire RTDs. (For thermocouple applications the HAZ-CJC plug on terminals 1–3 includes an integral CJC sensor). Configuration is carried out using a personal computer.

SPECIFICATION

See also common specification

Number of channels

One

Location of signal source

Zone 0, IIC, Hazardous area

Division 1, Groups A-D, hazardous location

Signal source

Input	Type	Min. span
THC	J,K,T,E,R,S,B,N	BS EN 60584-1:1996
	XK	GOST P8.585-2001
mV	-75 to +75mV	3mV
RTD	Pt100, Pt500, Pt1000	BS EN 60751:2008
	Cu-50, Cu-53	GOST 6651-94
	Ni100, Ni500, Ni1000	DIN43760:1985
Resistance	0 to 400Ω	10Ω

RTD excitation current

200μA nominal

Cold junction compensation, THC input

Selectable ON or OFF

Cold junction compensation error

≤ 1.0°C

Common mode rejection

120dB for 240V at 50Hz or 60Hz

Series mode rejection

40dB for 50Hz or 60Hz

Calibration accuracy (at 20°C)

(includes hysteresis, non-linearity and repeatability)

Inputs:

mV/THC: ± 15μV or ± 0.05% of input value
(whichever is greater)

Pt 100 - RTD: ± 80mΩ

Output: ± 11μA

Temperature drift (typical)

Inputs:

mV/THC: ± 0.003% of input value/°C

Pt 100 - RTD: ± 7mΩ/°C

Output: ± 0.6μA/°C

Example of calibration accuracy and temperature drift (RTD input)

Span: 250Ω

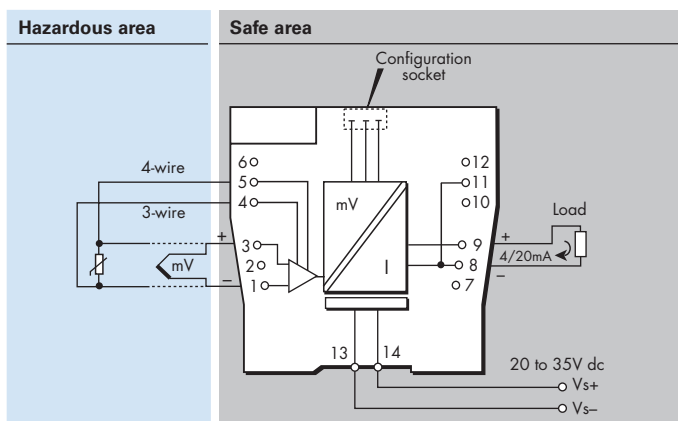
Accuracy: ± (0.08/250 + 11/16000) × 100%
= 0.1% of span

Temperature drift: ± (0.007/250 × 16000 + 0.6) μA/°C
= ±1.0μA/°C

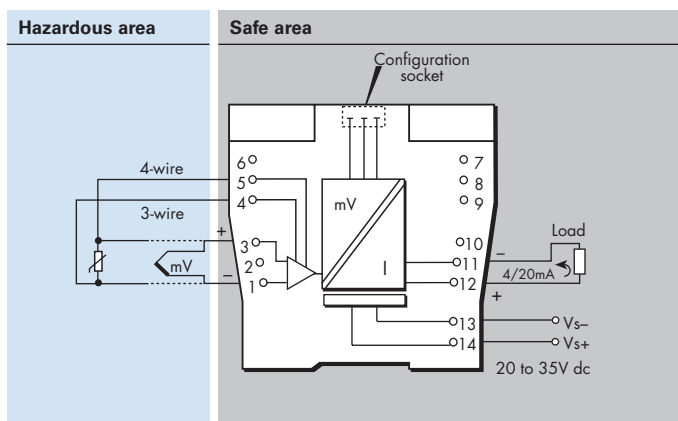
Safety drive on sensor failure

Upscale, downscale, or off

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Early burnout

Early burnout detection for thermocouples (when selected)

EBD indicated when loop resistance increase is > 50Ω

Output range

4 to 20mA nominal into 600Ω max.

Out of range characteristic - MTL or NAMUR NE43

Maximum lead resistance (THC)

600Ω with safety drive on sensor failure enabled.

>10kΩ with safety drive on sensor failure disabled

Response time

Typical 500 ms

LED indicator

Green: EBD alarm indication, power and status indication

Yellow: alarm indication

Maximum current consumption (with 20mA signal)

50mA at 24V

Power dissipation within unit (with 20mA signal)

1.2W at 24V

Safety description

Refer to certificate for parameters. $U_m = 253V$ rms or dc

Configurator

A personal computer running MTL PCS45 software with a PCL45USB serial interface.

The given data is only intended as a product description and should not be regarded as a legal warranty of properties or guarantee.
In the interest of further technical developments, we reserve the right to make design changes.



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